

Patent claims

1. An extruder head (50) for use in a device for the coating of a conductor or a conductor line (72),
5 with at least one extruder die (56), which is connected on the input side to a supply conduit (58) for feeding the coating material and opens out on the output side into a region to which the conductor that is to be coated or the conductor line that is to be coated is adjacent during operation, characterized in that the outlet of the extruder die (56) can be closed by means of a seal (57).
- 15 2. The extruder head as claimed in claim 1, a bypass branch (68) being arranged in the supply conduit (58) or the extruder die (56) upstream of the seal (57) in the feeding direction of the coating material.
- 20 3. The extruder head as claimed in claim 2, the bypass branch (68) being connected via a conduit to a collecting container.
- 25 4. The extruder head as claimed in one of the preceding claims, the region into which the extruder die (56) opens out being a void (54) which is arranged in the extruder head (50) and has a cross section corresponding to the profile, the cross section of the void being made greater than the cross section of the conductor or the conductor line (72) by the thickness of the coating, preferably allowing for the form-dependent extrusion shrinkage.
- 35 5. The extruder head as claimed in one of the preceding claims, the extruder die (56) opening out essentially radially into the region.

6. The extruder head as claimed in one of the preceding claims, the cross section of the region into which the extruder die (56) opens out tapering
5 in the axial direction of the conductor line from the conductor line entry cross section to the conductor line exit cross section in a way corresponding to the extrusion shrinkage occurring in this region.
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7. The extruder head as claimed in one of the preceding claims, the extruder head (50) having a length in the axial direction of the conductor or the conductor line (72) which is less than one tenth, preferably less than one twentieth, of a
15 radius of the conductor line contour.
8. The extruder head as claimed in one of the preceding claims, a multiplicity of extruder dies (56) being arranged at the periphery of the void in such a distributed manner that a uniform layer thickness of the coating material forms on the periphery of the conductor or the conductor line.
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- 25 9. The extruder head as claimed in one of the preceding claims, the region into which the extruder dies open out tapering in the axial direction of the conductor or the conductor line from the conductor line entry cross section to the conductor line exit cross section, and/or restrictor bars and/or restrictor-ring segments, which are preferably adjustable, being arranged in this region, in order to achieve a pressure build-up.
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10. The extruder head as claimed in one of the preceding claims, the extruder head (50) being

designed on the principle of pressure coating of a conductor or a conductor line.

11. The extruder head as claimed in one of claims 1 to 5, the extruder head (50) being designed on the principle of tube coating of a conductor or a conductor line.
12. The extruder head as claimed in one of the 10 preceding claims, two or more extruder dies (56a, 56b) being arranged one behind the other in the axial direction in the extruder head (50).
13. The extruder head as claimed in one of the 15 preceding claims, an elastomer or a thermoplastic being used as the coating material, the elastomer or the thermoplastic preferably being mixed with a filler.
14. An extrusion device (100) for the coating of a conductor or a conductor line (72), with at least 20 one extruder head (50) as claimed in one of claims 1 to 13 and a conveying element (66) for conveying the coating material.
15. The extrusion device as claimed in claim 14, also comprising an automatic control system (104), which controls an opening or closing of the seal (57) of the extruder die (56) in dependence on the relative 25 position of the conductor that is to be coated or the conductor line (72) that is to be coated in relation to the extruder die (56).
16. The extrusion device as claimed in either of claims 30 14 and 15, the extrusion device (100) also comprising a transporting device (106), which transports the conductor line (72) through the 35

region into which the at least one extruder die (56) opens out.

17. The extrusion device as claimed in either of claims
5 14 and 15, the extrusion device (100) also comprising a holding device (81) for the conductor line (72) and a transporting device (83) for the extruder head (56), so that the extruder head (56) can be guided along the stationary conductor line.
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18. The extrusion device as claimed in one of claims 14 to 17, the extrusion device (100) also comprising a device (98) for aligning filler (99) in the form of fibers or platelets.
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19. The extrusion device as claimed in one of claims 14 to 18, the extrusion device (1) also having one or more heating elements (108), which heat the conductor line (72) to a pre-heating temperature.
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20. The extrusion device as claimed in one of claims 14 to 19, at least two extruder heads (56a, 56b) being arranged one behind other, so that at least two layers of coating can be correspondingly applied on
25 the conductor line.
21. The extrusion device as claimed in one of claims 14 to 20, a calibrating device (96), preferably at least one calibrating roller, being arranged at the
30 exit of the extruder head.
22. A method for the coating of a conductor line, the method comprising the steps of:
 - a) continuously conveying a flowable coating
35 material from a storing reservoir into a collecting reservoir;

- b) producing a relative movement between the conductor line and an extruder head of an extrusion device;
 - c) guiding the conductor line along the extruder head, an intermediate space remaining between the conductor line and the extruder head;
 - d) introducing at least part of the continuously conveyed coating material into the intermediate space;
 - e) ending the introduction of coating material into the intermediate space as soon as the end of the region of the conductor line that is to be coated is reached.
- 15 23. The method as claimed in claim 22, a calibration of the thickness of the coating material also taking place in method step d.
- 16 24. The method as claimed in either of claims 22 and 23, the coating material being an elastomer or thermoplastic mixed with a filler in the form of fibers or platelets and the filler additionally being aligned in the direction of extrusion in method step d during the curing process of the coating material.